

	FDA 215	Units
Open Circuit Voltage	5	V
Short Circuit Current	3.5	µA
Input Control Current	5	mA

## Features

- Optically-Isolated Input to Output
- May be Configured for AC and DC Switching
- 5mA Control Current
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape Reel Versions Available
- Dual Independent, Floating Outputs for Parallel, Series, or Isolated Configuration
- Replacement of Discrete Components
- Solid State Reliability
- VDE compatible

## Applications

- MOSFET Driver
- Programmable Control
- Process Control
- Instrumentation
- Telecommunications

## Description

The FDA215 is a dual photovoltaic MOSFET driver that uses a pair of optically coupled GaAlAs LEDs to drive two photodiode arrays. When the input current is applied to the LED, the light emitted will activate the photodiode array and generate a voltage at the output. The photodiode arrays are capable of generating a floating source voltage and current sufficient to drive high power MOSFET transistors. The optical coupling provides a high level of input to output isolation. The FDA215 is well suited for use in discrete solid state relay designs and other isolated switching applications.

## Approvals

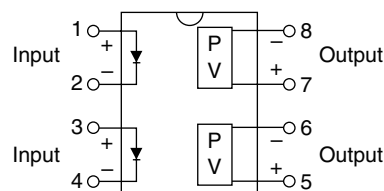
- UL recognized file #: E76270
- CSA certified file #: LR 43639-12
- BSI Certified:
  - BS EN 60950:1992 (BS7002:1992)  
Certificate #:7344
  - BS EN 41003:1993  
Certificate #:7344

## Ordering Information

Part #	Description
FDA215	8 Pin DIP (50/tube)
FDA215S	8 Pin Surface Mount (1000/reel)

## Pin Configuration

### FDA215 Pinout



**Absolute Maximum Ratings (@ 25° C)**

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 <sup>1</sup>	mW
Input Control Current	-	-	100	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Power Dissipation Total Package Dissipation	-	-	500 <sup>2</sup>	mW
Isolation Voltage Input to Output	3750	-	-	V <sub>RMS</sub>
Operational Temperature	-40	-	+85	°C
Storage Temperature	-40	-	+125	°C
Soldering Temperature DIP Package	-	-	+260	°C
Surface Mount Package (10 Seconds Max.)	-	-	+220	°C

<sup>1</sup> Derate Linearly 1.33 mw/°C<sup>2</sup> Derate Linearly 6.67 mw/°C

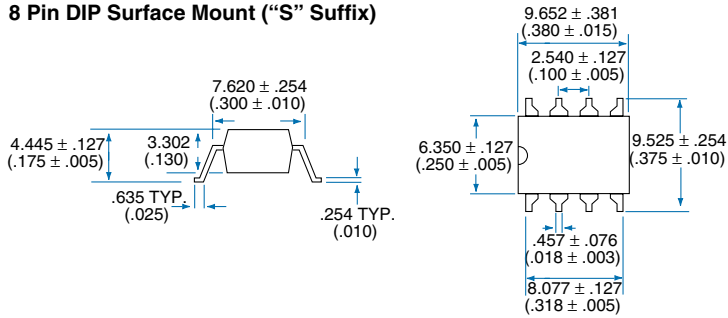
*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.*

**Electrical Characteristics**

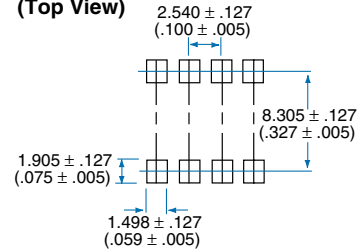
Parameter	Conditions	Symbol	Min	Typ	Max	Units
<b>Output Characteristics @ 25°C</b>						
Load Voltage	-	V <sub>L</sub>	-	-	10	V
Load Current	-	I <sub>L</sub>	-	-	1	μA
Open Circuit Voltage	I <sub>F</sub> =5mA	V <sub>OC</sub>	-	5.5	8	V
Short Circuit Current	I <sub>F</sub> =5mA	I <sub>SC</sub>	1.0	2.5	-	μA
Short Circuit Current	I <sub>F</sub> =25mA	I <sub>SC</sub>	2.5	3.5	-	μA
Switching Speeds						
Turn-on	I <sub>F</sub> =5 mA, C <sub>LOAD</sub> =200pF	T <sub>ON</sub>	-	-	5.0	mS
Turn-off	I <sub>F</sub> =5 mA, C <sub>LOAD</sub> =200pF	T <sub>OFF</sub>	-	-	5.0	mS
Offstate Clamping Resistance	-	R <sub>CL</sub>	-	0.25	3.3	KΩ
Capacitance Input to Output			-	3	-	pF
<b>Input Characteristics @ 25°C</b>						
Control Current	-	I <sub>F</sub>	5	-	100	mA
Input Voltage Drop	I <sub>F</sub> =5mA	V <sub>F</sub>	0.9	1.2	1.4	V
Reverse Input Voltage	-	V <sub>R</sub>	-	-	5	V
Reverse Input Current	-	I <sub>R</sub>	-	-	10	μA
<b>Common Characteristics @ 25°C</b>						
Input to Output Capacitance	-	C <sub>I/O</sub>	-	3	-	pF
Input to Output Isolation	-	V <sub>I/O</sub>	3750	-	-	V <sub>RMS</sub>

MECHANICAL DIMENSIONS

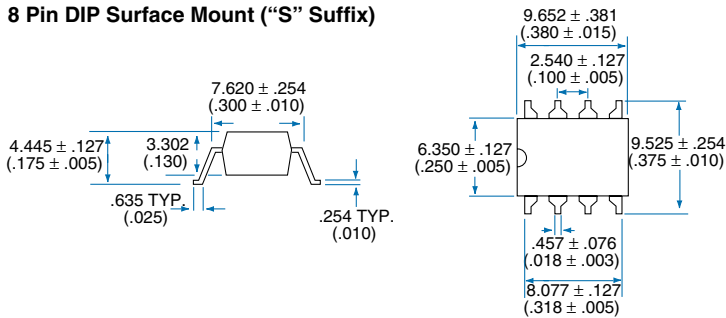
8 Pin DIP Surface Mount ("S" Suffix)



PC Board Pattern (Top View)

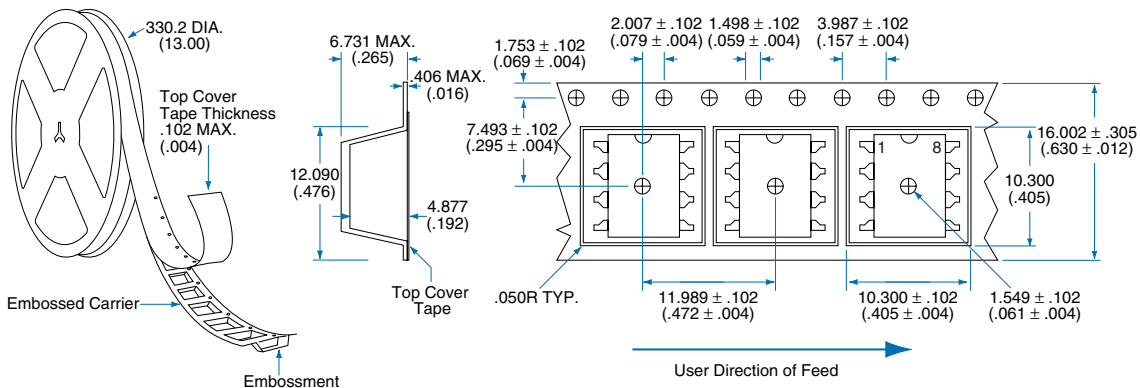


8 Pin DIP Surface Mount ("S" Suffix)



8 Pin Dip Package

Tape and Reel Packaging for 8 Pin Surface Mount Package



Dimensions  
 mm  
 (inches)



# CLARE

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